

A Newsletter  
About Prevention,  
Preparedness,  
and Response

# Spill SCENE



Spring 2001 Volume 5, Number 2

## Spill Prevention, Preparedness, and Response Program 2000 Annual Report

### Letter from the Program Manager

Each year seems to bring changes to the Spill Prevention, Preparedness, and Response Program, and 2000 was no different. The Program faced significant challenges meeting its statutory obligations and responding to new projects and initiatives. Program staff responded in 2000 with a substantial list of accomplishments:

- ◆ We increased our field responses to reports of spills by almost one-third.
- ◆ We maintained the highest level of vessel inspections since Ecology and the Office of Marine Safety merged in 1997.
- ◆ We completed the North Puget Sound Risk Management Process, examining the causes of spills and vessel incidents in this critical marine transportation corridor.
- ◆ We completed 102 spill preparedness drills. We doubled the number of illegal drug lab cleanups.
- ◆ We completed the first phase of investigation into the Olympic Pipe Line gasoline spill and fire.

The list goes on and on – this report gives more details on much of this work.

What does the upcoming year hold?

- ◆ Additional spill prevention and response work with pipelines, as the state and federal governments adjust roles and responsibilities.
- ◆ Improvements to the state's oil spill contingency planning system.
- ◆ More inspections and technical assistance visits to vessels as the world of shipping changes across the globe.

The Spills Program changes as we learn and adapt to a changing world. But we always strive to maintain our strong service role and to build and maintain strong partnerships at the local, state and federal levels. We have the two key elements for success: an important and worthy mission and an excellent, dedicated staff.

**Stan Norman**  
Acting Program Manager

### Program Overview

The Spill Prevention, Preparedness, and Response Program at the Washington Department of Ecology works to protect Washington's environment and public health and safety from the hazards created by spills of oil and other hazardous substances. The Program focuses on preventing oil spills to Washington waters and land, on effective response to oil and hazardous substance spills wherever they occur, and on mitigating the damage caused by spills.

The Program is composed of 60 staff – spill responders,

**Continued on Page 2**

Joe Stohr, Spills Program Manager from 1997 through 2000, took the job of Program Manager of the Water Resources Program at the Department of Ecology in March 2001. During his time with the Spills Program, Mr. Stohr oversaw the merger with the Office of Marine Safety and the development of a strong, integrated program of environmental protection and stakeholder cooperation.

vessel inspectors, environmental planners, engineers, and other management and support staff. An additional 22 staff from other Ecology offices serve as part-time, after-hours spill responders. The Spills Program maintains vessel inspection field offices near the Seattle and Portland ports, regional response offices in Bellevue, Lacey, Yakima, and Spokane, and a headquarters' office in the Ecology building in Lacey.

Ecology staff have responded to spills since the Department's inception in 1970, but a full-time, dedicated spill response staff was not instituted until the early 1990s. In 1991, the Washington State Legislature passed the Oil Spill Prevention and Response Act in response to the 1988 *Nestucca* oil barge spill in Grays Harbor County and the 1989 *Exxon Valdez* oil spill in Alaska.

The Act set the funding mechanism and mandate for the state's spill program. It increased state involvement in oil spill prevention, preparedness, and response activities. Oil spill prevention activities were split between the state Office of Marine Safety (OMS), to oversee marine vessel safety and spill prevention activities, and the Department of Ecology, to oversee spill prevention activities at oil handling facilities (refineries, pipelines, etc.). In 1997, OMS merged with Ecology's spill prevention and response office to create the current Spills Program.

## Spill Prevention Activities

### Intertanko

The Spills Program's efforts to prevent oil spills from vessels underwent a dramatic change in 2000. The Program had based its spill prevention work for oil tankers and tank barges on a system of operating standards, documented by required spill prevention plans. But on March 6, the U.S. Supreme Court ruled that several of Washington's Best Achievable Protection (BAP) standards for tank ships were pre-empted by federal law and regulation (*Intertanko vs. Locke*). The ruling held that only the federal government may regulate the subject matter in the pre-empted standards.

Intertanko, an association of independent tanker owners based in Norway, filed the lawsuit in July 1995, shortly after the BAP standards became mandatory for tank vessels operating in Washington.

Based on the Court's guidance provided in its decision, Ecology and the State Attorney General decided to suspend enforcement of all the BAP standards for tank vessels. The state eventually repealed the oil spill prevention plan rules for tank vessels with the intent of drafting new rules that reflect the limits imposed by the decision.

The Intertanko ruling was a landmark decision. It gave definitive guidance on areas of vessel operation and management that states may not regulate without the concurrence of the federal government, represented in this case by the U.S. Coast Guard. Washington's BAP standards pushed the envelope when they were adopted in 1994. Many of the BAP standards have now become federal and international standards because they are, in fact, appropriate standards for the safe operation of tank vessels.

The Spills Program, with the Thirteenth Coast Guard District, has begun a detailed analysis of the "gaps" between the BAP standards and the federal/international standards for tank vessels to determine precisely what oil spill prevention measures were lost in the decision.

### Voluntary Best Achievable Protection (VBAP) Program

In response to the Intertanko decision, in June the Spills Program launched the Voluntary Best Achievable Protection (VBAP) Program for tank vessels. Under this program, owners and operators voluntarily meet the BAP standards for tank ships and tank barges, increasing their overall level of marine safety and reducing the probability of a spill. During 2000, 50 percent of the tank ship transits in Washington waters were made by companies enrolled in this voluntary environmental protection program.

Companies enroll by submitting oil-spill prevention plans. Once Ecology has reviewed and approved the plan, the company is granted Associate Member status. A company moves to Full Member status after Ecology has inspected its vessels. Ecology publicly recognizes these companies for their commitment to marine safety and environmental stewardship.

### Vessel Spill and Incident Analysis

In 2000, the Spills Program Field Offices in Portland and Seattle maintained the high pace of vessel inspections they achieved in 1999. The number of entering vessel transits, the number of these vessels screened,

the screening results, and the number of vessels inspected remained relatively constant. (See Table 1.)

**Table 1. Vessel Totals and Performance Indicators**

Summary Totals	1998	1999	2000
Vessel Entering Transits to Washington Waters <sup>1</sup>	5,178	5,601	5,652
Cargo Vessel Screenings	2,629	2,651	2,659
Screened Vessels of High/Very High Risk	1,391	1,586	1,601
Incidents Reported <sup>2</sup>	94	107	131
Inspections	759	919	904
Citations Issued	141	155	112
Performance Indicators			
Incident Rate (% of vessel transits) <sup>3</sup>	1.5%	1.72%	2.0%
% Vessels Screening High/Very High Risk	52.9%	59.8%	60.2%
Enforcement Actions (% of vessels inspected)	18.6%	16.9%	12.4%
<sup>1</sup> Commercial cargo, passenger, and fishing vessels, 300 gross tons and larger, and all oil tankers. Does not include tank barges, ferries, or Canada-bound vessels. <sup>2</sup> Spills and marine casualties (collision, loss of power, serious violation, etc.) for all vessels. <sup>3</sup> These rates are adjusted to exclude ferries.			

## Prevention Overview

**Vessel Screening** – Cargo and passenger vessels entering Washington waters are screened for potential environmental risks.

**Vessel Boarding Program** – Inspections evaluate the risk of harm to the public and environment posed by commercial ships.

**Bunker Monitoring (Refueling)** – Bunkering inspections help reduce the frequency of spills during fuel transfers.

**Investigations** – Investigations of vessel incidents (marine casualties, oil spills, near misses, etc.) help determine if prevention lessons can be learned.

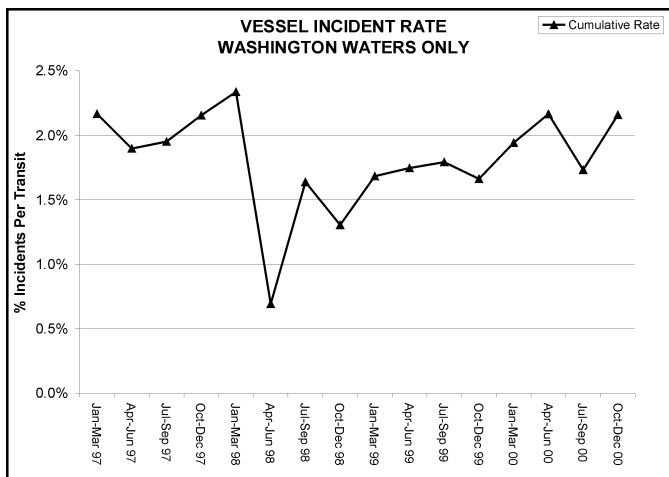
**Oil-Handling Facilities** – Facility owners submit spill prevention plans to Ecology to ensure that facilities operate in a safe and pollution-free manner.

The Spills Program has initiated a continuing effort to assess, through performance measures, whether our regulatory efforts are properly focused, and to identify areas where increased attention is warranted. Figures 1 - 6 indicate some early conclusions from this effort.

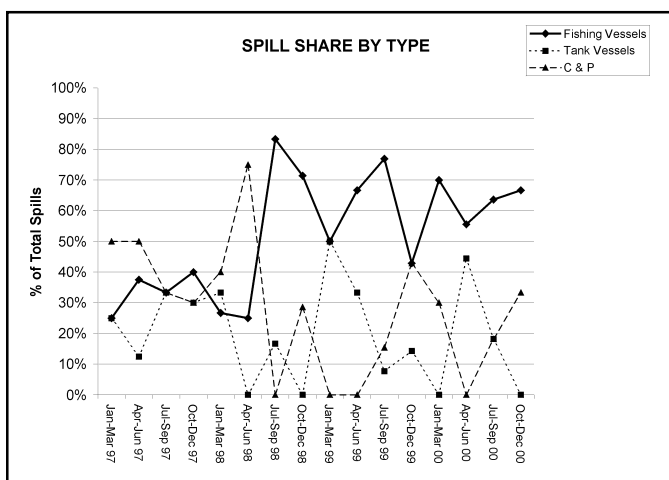
The number of vessel incidents and the incident rate continued a three-year upward trend. (See Figure 1.) This increase is primarily attributable to an increase in spills by fishing vessels over the past three years. (See Figure 2.) The operations aboard fishing vessels that contribute most heavily to the spill rate are bunkering (refueling), internal fuel transfer operations and piping system failures. (See Figure 3.)

The incident rate for vessels screening in the highest category of risk, compared to the incident rate for other vessels, validate the screening process used by inspectors in determining which vessels to inspect. (See Figure 4.)

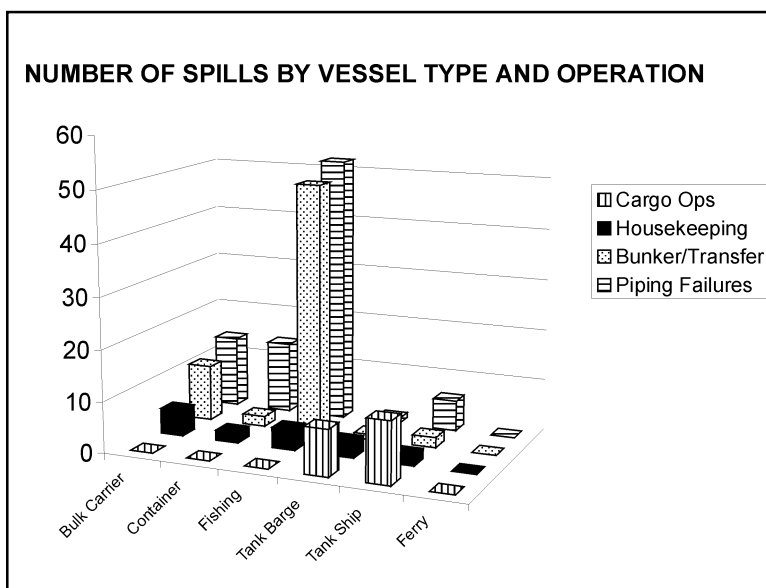
Vessels that have undergone a bunker monitor inspection show a



**Figure 1. Vessel Incident Rate**



**Figure 2. Spills by Type of Vessel**



**Figure 3. Spills by Type of Operation**

significantly decreased rate of spills from bunkering operations, as compared to the “All Vessel Rate.” No spills have occurred within 60 days following the inspection, and the rate within 180 days following the inspection continues to show a substantial reduction. (See Figure 5.) This reflects the educational value of the vessel bunkering inspection program.

Incidents provide an opportunity to learn from mistakes and system shortcomings. Detailed analysis of incidents allows for systematic improvements in marine safety through lessons-learned and prevention recommendations. It also provides detailed and verified information Ecology can use in making informed decisions regarding marine safety and spill prevention.

The information developed from these analyses is widely disseminated through Ecology’s Web site, case studies in Prevention Bulletins and compilation reports in Safety Advisory Bulletins. They are sent to vessel operators as specific prevention recommendations and shared with agencies such as the U.S. Coast Guard. The analyses are also used to target Spills Program staff time and resources.

In 2000, staff issued a Safety Advisory Bulletin highlighting the importance of addressing the root-causes of equipment malfunctions aboard ships. A number of incident investigations had revealed that ship operators were treating the symptoms of malfunctions without addressing the underlying problems. This Bulletin emphasized the need to fully investigate and identify underlying problems to achieve a higher level of marine safety and prevent spills.

Ecology also uses reports of incidents from ship masters, agents, operators, and other government agencies. Although these may be simply documented, with no substantial analysis, they are used to develop maps that indicate where marine safety ‘hot-spots’ exist in Washington waters.

Program staff in 2000 added two features to Ecology’s Web site – the “Event of the Month,” and the “Picture of the Month.” Staff developed and posted six editions of each feature to highlight marine safety incidents. These may be used for discussion at shipboard safety meetings or for highlighting good maritime practices. They also provide the people of Washington with a window upon marine safety concerns within state waters.

Analysis of marine incidents investigated since 1993 has shown that 80 percent of incidents resulted from human and organizational

factors. (See Figure 6.) This long-term analysis produced a three-part series published on Ecology's Web site.

In 2000, staff published findings of the investigation into the 1999 grounding of the vessel MONCHEGORSK. As a result, the monthly maritime journal, *Professional Mariner*, invited Ecology staff and the Washington State Board of Pilotage Commissioners to present the incident as a case study to 200 maritime professionals at MarCas 2000, their first-ever marine casualty conference.

## Facility Spill Prevention Planning

There are 36 oil-handling facilities in Washington under Spills Program regulations. Six pipelines come under a more limited level of regulation. Facilities are required to have training and certification programs that ensure key personnel are adequately trained and have demonstrated competency. Experience has taught Ecology that nearly all spills can be traced to a failure on the part of an operator to either fully understand the operating procedures, or to a willful disregard of those procedures. Spills Program staff will continue to focus on the facilities' commitment to training and supporting their operators, as this is crucial to minimizing the frequency of spills.

Ecology evaluates and certifies the adequacy of each facility's training program through on-site inspections every five years. During 2000, Ecology staff conducted on-site inspections and evaluations of all of the facilities and re-issued certifications for training programs at 34. Certifications are pending at two facilities.

Several of the facilities failed to implement and maintain their training programs. In at least two instances, facility staff had no current knowledge of the existence of the training program. Facilities had to bring their program into compliance with the requirements before receiving their certification. Recertification will not need to be done again until 2005, but in the meantime staff plan to re-inspect the training programs of those facilities that had done the least maintenance of their programs.

Facilities must also prepare operations manuals and submit them to Ecology for review and approval. These manuals help ensure the facilities have incorporated Best Achievable Protection standards to prevent spills when they transfer oil. Most of the reviews of operations manuals during the last fiscal year (July 1999 through June 2000) were updates to address new ownership, new equipment, or changes in practices due to recent spills.

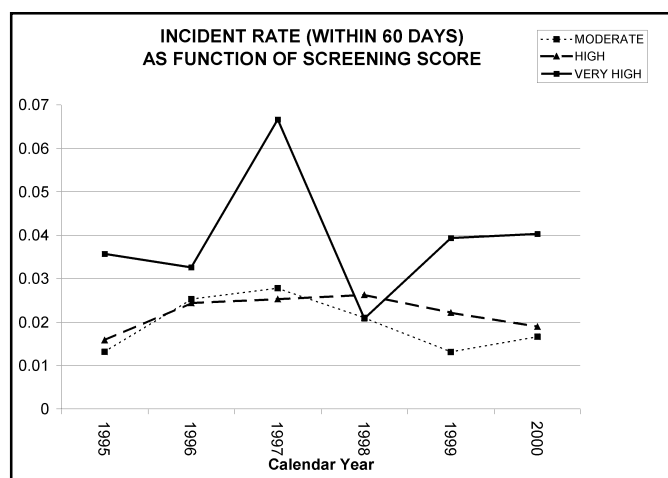


Figure 4. Incident Rate as Function of Screening Score

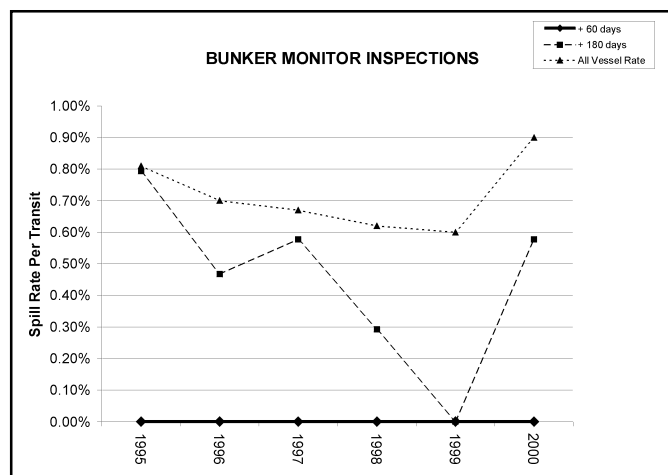


Figure 5. Bunker Spill Rate Following Inspection

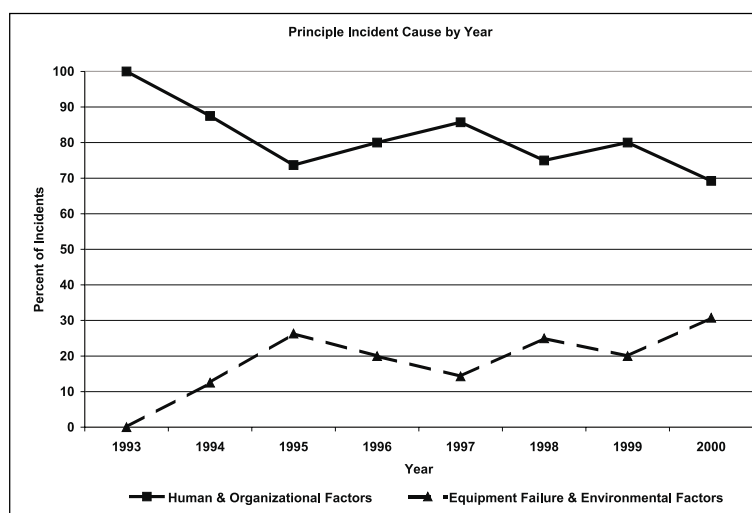


Figure 6. Causes of Incidents



Staff also conducted follow-up inspections of spill incidents to ensure that facilities implemented measures to prevent recurrences.

Facilities also must submit spill prevention plans every five years. All facilities are due to re-submit their prevention plans during 2001-2002. During 2000, the Program notified the facilities of this impending requirement and asked for an update of basic information on their facilities. Most of the facilities have responded.

## **North Puget Sound Protection**

### **North Puget Sound Risk Management Panel**

The North Puget Sound Long-Term Oil Spill Risk Management Panel produced its final report and recommendations in 2000. The panel included representatives of 20 groups with an interest in marine safety issues in North Puget Sound. The U.S. Department of Transportation and the state of Washington established the panel in late 1999 with the goal of developing an oil spill risk management plan for Washington's largest marine transportation corridor. The study area extended from the northern outer coast through the entrance to the Strait of Juan De Fuca and included all waters north of Port Townsend (Admiralty Inlet) through the San Juan Islands to the Canadian border.

Building primarily on existing information, the Panel completed the most comprehensive risk management planning process in recent years. The report concluded that approximately 15 billion gallons of oil moved through Puget Sound during 1999. About half consisted of crude oil being transported to Washington refineries in about 1,270 tanker transits and a large number of oil barge movements. There were also approximately 9,800 cargo and passenger vessel transits in the area, carrying considerable amounts of fuel. A recent Coast Guard study estimated that the current probability of an oil spill over 10,000 gallons in Puget Sound is one in five years, and that this probability will increase to one in 3.6 years by 2025, if new prevention measures are not established.

The Panel's report, *North Puget Sound Long-Term Oil Spill Risk Management Panel – Final Report and Recommendations*, made 24 formal recommendations. These included improvements to vessel routing, industry "Standards of Care," improvements to vessel inspection programs, Canadian engagement, expanding the Olympic Coast National Marine Sanctuary "area-to-be-avoided," vessel traffic management, partnership mechanisms, and spill response. The Panel's work improved the dialogue and debate among community stakeholders. It strengthened the federal/state relationship with a commitment to revise the interagency agreement between the Coast Guard and Ecology. Six other measures (including two recommendations related to vessel towing) were considered but not passed.

The process has opened a dialogue among diverse community interests that will continue to produce results far into the future. The underlying conflict on the need for the Neah Bay rescue tug, however, was not resolved.

The Coast Guard, Department of Ecology, and Puget Sound Harbor Safety Committee began moving forward on implementing the recommendations and making progress on some of the key unresolved issues. The Panel's report will also form the basis for future discussions on how to best protect our shorelines, environment, and economy from the risk of major oil spills.

For more information on Spills Program activities, and for copies of publications, visit our Web site at:  
<http://www.ecy.wa.gov/programs/spills/spills.html>

## Neah Bay Rescue Tug

A dedicated rescue tug was stationed at Neah Bay briefly in early 1999, and from December 1999 through June 2000. Analysis completed in 2000 showed that over the last two winters, the rescue tug was the most effective additional measure available to prevent major oil spills in the Strait of Juan De Fuca, the Olympic Coast National Marine Sanctuary, and on the shores of Olympic National Park.

The 2000 Washington Legislature passed a supplemental budget proviso that appropriated \$1.65 million to establish a rescue tug at Neah Bay to assist disabled commercial vessels and prevent major oil spills. The legislation also required Ecology to report on the activities of the dedicated rescue tug. Ecology stationed a rescue tug at Neah Bay starting in September 2000, under a contract that runs into June 2001.

In cooperation with the U.S. Coast Guard, the tug was used five times during 2000 to respond to “emergency” situations. In addition to protecting our waters and shores, this process has demonstrated the importance of federal/state cooperation and partnerships.

Ecology’s report, *Neah Bay Rescue Tug – Report to the Washington Legislature*, concluded that:

- ◆ Oil spill risk may increase;
- ◆ Other areas of the world have established rescue tugs to protect their waters;
- ◆ A majority of the North Puget Sound Oil Spill Risk Management Panel members voted in favor of a government-funded, dedicated rescue tug;
- ◆ The federal government has significant responsibility to fund the tug;
- ◆ The actual cost of deploying a tug was significantly lower than previous industry estimates; and
- ◆ The tug has been effective.

The report recommended that state funding be provided to station a rescue tug at Neah Bay while federal funding is pursued. If long-term federal funding does not become available, the state would have the option to proceed with rulemaking, possibly for a user-fee supported rescue tug.

## Spill Preparedness Activities

### Facility Drills and Exercises

Ecology engages facilities, vessels and spill response organizations in drills and exercises on a regular basis. These drills:

- ◆ Increase readiness in the event of an actual emergency.
- ◆ Provide a means to assess the effectiveness of response plans and response capabilities.
- ◆ Demonstrate the knowledge and skill of the plan implementers.
- ◆ Serve as a training tool for response personnel.
- ◆ Provide an opportunity to practice skills and improve individual performance in a non-threatening environment.
- ◆ Require participants to network with each other and pre-plan decisions on resources.
- ◆ Provide a means to educate and involve the public, media, and key community organizations in response planning.
- ◆ Validate existing policies and procedures.
- ◆ Identify planning conflicts.
- ◆ Identify resource needs.
- ◆ Clarify roles and responsibilities.

## Preparedness Overview

### Contingency Plan Review and Oil Spill Drills

– Oil handling facilities, oil tankers and barges, and fishing, cargo and passenger vessels must have approved oil spill contingency plans to operate in Washington waters. Contingency plans describe the immediate actions and notifications that must be done in the event of a spill. Facilities and response organizations used by vessels run drills each year to train their personnel and test their ability to respond properly.

**Geographic Response Plans (GRPs)** – GRPs identify and rank natural resource protection strategies for a particular region. This takes the guesswork out of the initial response during the first 12 to 24 hours.

**Natural Resource Damage Assessments** – Assessment of damages to state natural resources caused by oil spills and recovery of restoration costs from the parties responsible for the spill.

**Interagency Coordination** – Coordination between states and provinces along the West Coast ensures a consistent approach to spill prevention and response.

**Education and Outreach** – Educate, inform and advise interested parties about spill prevention and response.

Facilities are required to hold two deployment exercises and one tabletop (paper) exercise each year. Approximately 85 percent of the facilities met their deployment exercise requirement, and 89 percent met their tabletop exercise requirement in 2000. Ecology participated in and evaluated 33 tabletop and 63 deployment drills. The largest drills were the BP (formerly Arco) Cherry Point Refinery worst-case tabletop and deployment exercises, the U.S. Navy's regional tabletop exercises, and the worst-case exercises at Time Oil and Burlington Northern Santa Fe, Tosco Ferndale Refinery, and U.S. Oil. The Time Oil and Burlington Northern Santa Fe joint exercise also tested the recently developed Ship Canal Geographic Response Plan.

Many of the drills at smaller facilities were significant in that Ecology helped with the training and to some degree the drill design. Experience has shown that training and coaching facility staff during drills improves the level of teamwork during actual spills.

Common problems and trends observed during 2000 drills could be traced to a lack of training. Most spill management team members at facilities only do this work during drills and spills. They do not have the opportunity to work together on an on-going basis, so more training is always helpful.

## Response Overview

### 24-Hour Statewide

**Response** – Ecology provides round-the-clock response to oil and hazardous material spills that pose a risk to public health and safety and the environment. Responders serve as Ecology's eyes and ears, following up on reports of pollution.

**Compliance and Enforcement** – Once an oil spill occurs, Ecology can take a wide range of enforcement and compliance actions including administrative orders, field citations, penalties, and cost recovery of all response costs incurred by the state.

**Cleanup Oversight** – As the state natural resource trustee during an oil spill, Ecology has oversight authority to ensure that the responsible party is acting responsibly to clean up the spill and to fully protect the environment.

## Vessel Drills

Large vessels operating in Washington waters are required to have contingency plans for oil spills. Ecology uses vessel notification drills to evaluate a plan holder's readiness to respond to an oil spill. These "no-notice" drills allow vessel crews to practice the notification procedures described in their plans. Foreign crews with little or no experience making oil spill notifications crew many of the vessels that Ecology boards. Ecology emphasizes notifications because timely notification allows quicker spill responses, which reduces the impact on the environment. Ecology staff conducted 46 notification drills and one deployment drill with vessels during 2000.

Drills also allow plan holders to work with the contractors and state and federal agency personnel without the pressure of an actual oil spill. This helps identify areas in the plan that work well and areas that could be improved.

One of the biggest problems revealed during the notification drills was the tendency for vessel crews to stop the notification process after calling their "qualified individual," without notifying the federal and state agencies and spill response contractors. The qualified individual is a person designated by the plan holder to make response decisions and commit funds. Staff have worked with the qualified individuals and plan holders to resolve most of the issues.

## Contingency Plan Rules Revision

In 2000, Ecology began revising the spill contingency plan rules for vessels and facilities by reviewing Washington's current rules and those from other states and federal agencies. Staff distributed information about the rule revision process in the spring and solicited public input on possible issues to address through a fact sheet and Ecology's Web site. After looking at possible revisions to the rule, staff drafted and distributed Issue Statements for the seven most significant proposed changes. These included emergency services, drills, response planning standards, quali-



fied individuals, wildlife rescue, prevention credits, and waivers. Staff also presented information about the rule revision process and issues to numerous interested parties.

## Geographic Response Plans

Geographic Response Plans (GRPs) are used during the initial response to an oil spill to water. This “emergent” phase lasts from the time a spill occurs until the Unified Command is operating or the oil spill has been contained and cleaned up. It generally lasts no more than 24 hours. GRPs identify and prioritize public natural resources to be protected, and list the amount of boom needed for each strategy and how the boom should be deployed. By using these plans, the first responders can avoid the initial confusion that often accompanies a spill.

The GRPs for Washington were first developed in the early 1990s, and have only been available as paper copies. During 2000, work started to update all the GRPs and post them on Ecology’s Web page.

## Spill Response Activities

### Spills Reported

In 2000, the Spills Program received reports of 4,203 spills in Washington. (See Figure 6 and Table 3.) Staff conducted 1,681 field responses to investigate and clean up spills. Figure 6 illustrates where the reported spills occurred, by county and by Ecology region. It also shows the field responses by region. The percentage figures reflect each region’s portion of the total reported spills statewide.

### Confirmed Spills to Water

In 2000, there were 33 spills of oil or other hazardous substances, where the spill reached surface water. (See Table 2.) A total of at least 10,707 gallons spilled in these incidents. In 1999, there were 28 spills, for a total volume spilled of 284,359 gallons. This included 277,200 gallons of gasoline from the Olympic Pipe Line spill in Bellingham.

### Drug Labs

Ecology staff conducted 1,454 field responses in 2000 to clean up clandestine drug lab sites, primarily methamphetamine. This compares to 789 drug labs responded to in 1999. These sites were found in 33 of Washington’s 39 counties. Pierce County alone accounted for 545 of these labs.

The Spills Program gained some needed help with this work through the Counter Drug Task Force, a national program of the Air and Army National Guards. As part of the federally-funded program, an Air Force and an Army guard member joined Ecology’s staff in 2000 to work full-time on drug lab cleanup and support work.

Meth labs often contain modified and unstable pressurized cylinders. Meth cooks commonly use a variety of cylinders, ranging from fire

#### 25+ Gallon Spills to Water<sup>1</sup> for 2000

	Number of Spills	Gallons Spilled
Covered Vessels <sup>2</sup>	5	723
Uncovered Vessels	14	4,634
Other <sup>3</sup>	14	5,350
Total	33	10,707

<sup>1</sup>Surface water only. (Does not include Pasco Terminal leak to groundwater.)

<sup>2</sup>Vessels covered under state laws and rules (all cargo and passenger vessels 300 gross tons or larger, and all oil tankers and tank barges ).

<sup>3</sup>Pipelines, tanks, tank trucks, etc.

**Table 2. Spills to Water**

## Spill Reports by County for 2000

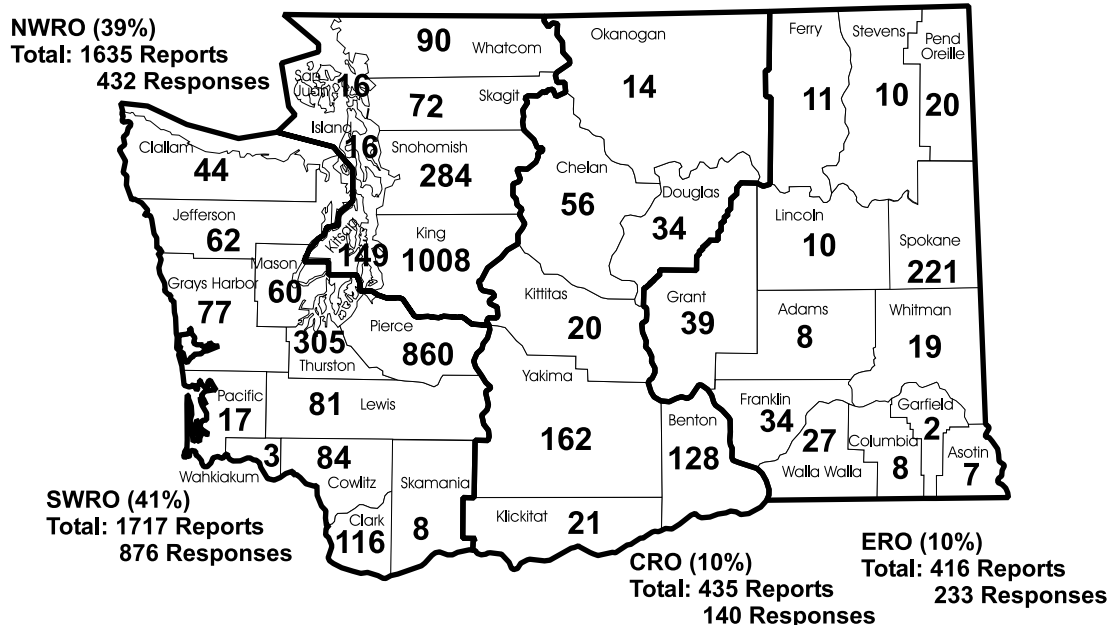


Figure 6. Spill Reports by County

extinguishers to just about any size and type of pressurized tank, to make hydrogen chloride gas. Many of the tanks found are five-gallon propane tanks used to store anhydrous ammonia, but 150-pound commercial ammonia tanks are turning up in increasing numbers.

Anhydrous ammonia and hydrogen chloride are poisonous and corrosive gases that present a significant threat to the public and spill responders. These tanks have been found in residential areas, in vehicles, motel rooms, and dumped along roads or behind commercial buildings. The tanks typically

have crudely modified valves and can be difficult to depressurize and dispose of. Generally, the only safe way to vent the tanks is to have law enforcement officials shoot them with a high-powered rifle under controlled conditions.

In the Southwest Region alone during 2000, law enforcement officials shot 368 pressurized cylinders, including 249 tanks containing anhydrous ammonia and 100 hydrogen chloride gas generators.

### Natural Resource Damage Assessment

Those responsible for oil spills must compensate Washington citizens for damage to public natural resources, in addition to penalties and cleanup expenses. Ecology

coordinates the assessment of oil spill damages and oversees efforts to restore injured resources in cooperation with other state resource agencies.

During 2000, 33 spills occurred that triggered the Natural Resource Damage Assessment process. As of March 2001, the monetary assess-

Spill Reports by Type for 2000	
Type of Substance	Number of Reports
Petroleum Products Gasoline, diesel fuel, crude oil, hydraulic oil, lubrication oil	1,518
Hazardous Substances Pesticides, insecticides, batteries, paint, other toxics (anhydrous ammonia, hydrochloric acid, solvents, lithium)	1,780
Miscellaneous Substances Wastewater, sewage sludge, garbage, dairy waste, algae	905

Table 3. Types of Spills

ment has been determined for 29 of those cases, for a total of \$88,362. Assessments may be collected during the year the spill occurs, or in later years. In 2000, \$65,686 was collected for restoration projects.

During 2000, work began on the Willapa River Estuary Restoration Project. This large project at the mouth of the Willapa River near South Bend is restoring farmland along the river to estuary habitat. State restoration funds provided \$100,000 to the project in 1999 as part of the matching funds for a multi-million dollar federal grant.

## Investigations and Enforcement

The Department of Ecology investigates major spills and incidents to determine:

- ◆ The cause(s) of the incident. This information helps Ecology educate and assist industry and others in prevention;
- ◆ Whether a penalty or other enforcement action is appropriate; and
- ◆ The volume of the spill, if any. Spill volume is the basis for assessing damage to natural resources.

Ecology staff work with federal agencies and industry as an interdisciplinary team in conducting investigations.

### Spill Investigations

Spills staff completed 13 detailed investigations and analyses of marine incidents in 2000. Three of these incidents involved spills, and staff produced findings of fact to support prevention recommendations, spill penalties, and Natural Resource Damage Assessment recovery efforts. All the incidents were analyzed to determine the lessons that could be learned and disseminated to the marine industry.

One significant vessel spill investigated involved the tanker ARCO TEXAS. In 1999 the tanker pulled away from a dock in Ferndale, Washington while unloading crude oil. This resulted in a 300-gallon spill, and damaged the oil handling facility and the ship. After intensive review of the ship's mooring equipment and the environmental conditions at the dock, investigators determined that the tidal current was stronger than predicted and there were previously-undocumented rapid changes in tidal current strength for the location. Ecology made specific recommendations to help prevent future breakaway incidents.

Staff also invested significant amounts of time in investigating and analyzing spill events at facilities, including a pipeline leak at the Tidewater terminal (*See Enforcement*) and the 1999 Olympic Pipe Line spill and explosion in Bellingham. The results have generally been used in enforcement, or in department-ordered changes in equipment and/or operating practices.

### Enforcement

Washington's rules are designed to keep oil and other hazardous material spills from occurring, and to make sure that the best possible action is taken promptly if a spill does occur. Any person who uses oil or hazardous substances in Washington is responsible for ensuring that these materials are not spilled into water or groundwater.

In addition to avoiding actual spills, vessels and facilities must operate in such a way that they prevent harm to public health and safety or the environ-

## Spill SCENE

**Spill Scene** is published by the Washington State Department of Ecology to provide information on oil and hazardous substance spill prevention, preparedness and response. We welcome your comments and questions. Call (360) 407-7211 or write: Editor, **Spill Scene**, Department of Ecology, Spills Program, P.O. Box 47701, Olympia, WA 98504-7701. Visit our website at [www.ecy.wa.gov/programs/spills/spills.html](http://www.ecy.wa.gov/programs/spills/spills.html)

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ment. For vessels these requirements cover aspects such as refueling and maintaining spill contingency plans; for facilities they cover aspects such as operation and design standards, training and spill prevention plans.

Ecology can respond to spills and violations of state rules in a variety of ways, including issuing penalties, warnings, and administrative orders, and requiring the responsible party to make changes to correct the problem. In 2000, Ecology issued a total of \$275,750 in penalties or field citations and two administrative orders for spills and related rule violations. This compares to 1999, when the agency issued \$253,000 in penalties or field citations and three administrative orders.

The largest 2000 penalty, \$240,000, was to Tidewater Barge Lines for a gasoline leak at their Pasco Terminal. The leak came from one of the three pipelines connecting Tidewater's facility with the Chevron Pasco Terminal. A hole corroded in a 50-year-old pipe had apparently been leaking for almost three months. During that time, 41,000 gallons of gasoline may have leaked to the ground and groundwater. To prevent future leaks, Tidewater replaced all uncoated pipelines with coated pipes, installed a pipeline cathodic protection system, conducted internal pipeline inspections, revised product transfer procedures, and began designing and installing pipeline leak detection.

During 2000, Ecology also issued 112 enforcement actions representing 395 violations of the rules for vessels. Three violations resulted in \$51,500 in penalties. This compares with 1999, when four violations resulted in \$5,600 in penalties. In 2000, there were 22 violations of the oil spill contingency plan requirement, one violation of the oil spill prevention plan requirement, 20 violations relating to substantial risk of environmental harm, and 353 violations of refueling requirements.

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